

CLAIMS:

1. An article comprising a base wherein said base comprises a closed cell foam core sheet, wherein said closed cell foam core sheet comprises at least one closed cell foam layer, wherein said at least one closed cell foam layer comprises a polymer that has been expanded through the use of a blowing agent, and wherein said closed cell foam core sheet has a density wherein said density comprises a gradient.
2. The article of Claim 1 wherein said closed cell foam core sheet comprises a solid polymer matrix, and a gaseous phase.
3. The article of Claim 1 wherein said polymer comprises polyolefin.
4. The article of Claim 1 wherein said polymer comprises polypropylene, its derivatives and copolymers.
5. The article of Claim 1 wherein said polymer comprises blends of polyolefin.
6. The article of Claim 1 wherein said polymer comprises polyester.
7. The article of claim 1 wherein said polymer comprises a melt flow rate of from 0.3 to 30 gms. of polymer/10 min.
8. The article of claim 1 wherein said polymer comprises a melt flow rate of 0.3 to 20 gms. of polymer/10 min.

9. The article of claim 1 wherein said polymer comprises a melt flow rate of 0.3 to 15 gms. of polymer/10 min.

10. The article of Claim 1 wherein said closed cell foam core sheet
5 has a center and at least one surface, and wherein said density gradient increases from said center to said surface.

11. The article of Claim 1 wherein said closed cell foam core sheet
has a center and at least one surface, and wherein said density gradient decreases
10 from said center to said surface.

12. The article of claim 1 wherein said closed cell foam core sheet
comprises at least two closed cell foam layers, and wherein said at least two closed
cell foam layers comprise different densities to form said gradient.
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13. The article of claim 1 wherein said closed cell foam core sheet
comprises at least three closed cell foam layers, wherein each of said at least three
closed cell foam layers has a density, wherein one of said at least three foam layers
is between the other of said at least three foam layers, and wherein the density of
20 said one layer between said other of at least three layers is less than the density of
said other of said at least three closed cell foam layers.

14. The article of Claim 1 wherein said closed cell foam core sheet
has at least one surface wherein said surface has a surface roughness average of
25 greater than 1.4.

15. The article of Claim 1 wherein said closed cell foam core sheet
is oriented in at least one direction.

16. The article of claim 15 wherein said article has a surface
roughness (R_a) of less than 0.4 μm prior to said orienting.
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17. The article of Claim 15 wherein said closed cell foam core sheet has at least one surface wherein said surface has a surface roughness average of less than 2.0 μm .

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18. The article of Claim 1 wherein said closed cell foam core sheet is cast.

19. The article of Claim 1 wherein said foam core sheet has a
10 thickness of from 25 to 1000 μm .

20. The article of Claim 1 wherein said foam core sheet has a thickness of from 25 to 250 μm .

15 21. The article of Claim 1 wherein said article further comprises at least one imaging layer applied thereto.

22. The article of Claim 21 wherein said imaging layer comprises at least one photosensitive silver halide layer.

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23. The article of Claim 21 wherein said imaging layer comprises an ink jet receiving layer.

24. The article of Claim 21 wherein said imaging layer comprises a
25 thermal dye receiving layer.

25. The article of Claim 21 wherein said imaging layer comprises an electrophotographic imaging layer.

30 26. The article of Claim 21 wherein said imaging layer comprises an autochrome imaging layer.

27. The article of Claim 21 wherein said imaging layer comprises a crushable dye encapsulated imaging layer.

5 28. The article of Claim 1 wherein said base has opacity greater than 90%.

29. The article of Claim 1 wherein said base has a thickness of from 100 to 400 μm .

10 30. The article of Claim 1 wherein said base has a b^* UVO blueness of less than 3.50.

15 31. The article of Claim 1 wherein said base has a L^* of from 90.0 to 97.0.

32. The article of claim 1 further comprising at least one flange layer adhered to said closed cell foam core sheet.

20 33. The article of Claim 32 wherein said flange layer is formed integrally with said foam core sheet.

34. The article of claim 32 wherein said flange layer comprises polymer.

25 35. The article of Claim 34 wherein said polymer comprises at least one member selected from the group consisting of high density polyethylene, polypropylene, or polystyrene, their blends or their copolymers.

30 36. The article of Claim 34 wherein said polymer comprises polyolefin polymer.

37. The article of Claim 34 wherein said flange layer comprises oriented polyolefin sheets.

5 38. The article of claim 37 wherein said oriented polyolefin layer is biaxially oriented.

39. The article of claim 32 wherein said flange layer comprises paper.

10 40. The article of claim 32 wherein said flange layer comprises fabric.

41. The article of claim 32 wherein said at least one flange layer comprises an upper and lower flange sheet.

15 42. The article of Claim 32 further comprising a whitening agent.

43. The article of claim 42 wherein said whitening agent comprises at least one inorganic compound.

20 44. The article of Claim 42 wherein said inorganic compound is selected from the group consisting of TiO_2 , CaCO_3 , clay, and talc.

25 45. The article of Claim 42 wherein said whitening agent is located in the flange layer.

46. The article of Claim 42 wherein said whitening agent is in said foam core sheet.

30 47. The article of Claim 32 further comprising an optical brightener.

48. The article of Claim 32 further comprising a tinting agent.

49. The article of Claim 32 further comprising polyethylene resin coatings on each side of said base.

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50. A method of making a base for an imaging member, wherein said base comprises a closed cell foam core sheet, wherein said closed cell foam core sheet comprises at least one closed cell foam layer, wherein said at least one closed cell foam layer comprises a polymer that has been expanded through the use of a blowing agent, and wherein said closed cell foam core sheet has a density wherein said density comprises a gradient, comprising the steps of adding a first concentration of a first blowing agent to a first polymer to form a first mixture, adding a second concentration of a second blowing agent to a second polymer to form a second mixture, and extruding said first and second mixtures to form said closed cell foam core sheet.

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51. The method of claim 50 wherein said first concentration is the same as said second concentration.

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52. The method of claim 50 wherein said first blowing agent is the same as said second blowing agent.

53. The method of claim 50 wherein said first polymer is the same as said second polymer.

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54. The method of claim 50 wherein said blowing agent comprises a chemical blowing agent.

55. The method of claim 54 wherein said chemical blowing agent comprises sodium bicarbonate, citric acid, and mixtures thereof.

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56. The method of claim 50 wherein said blowing agent comprises an exothermic blowing agent.

57. The method of claim 56 wherein said exothermic blowing agent comprises azodicarbonamide and its derivatives.

58. The method of claim 50 wherein said blowing agent comprises a physical blowing agent.

59. The method of claim 58 wherein said physical blowing agent comprises at least one gas selected from the group consisting of carbon dioxide, nitrogen, or hydrocarbon.

60. The method of claim 50 further comprising the step of adding a nucleating agent to said first or second mixture.

61. The method of claim 60 wherein said nucleating agent comprises less than 3% by weight of said first or second polymer.

62. The method of claim 60 wherein said nucleating agent comprises a particle having a diameter less than 10 μm .

63. The method of claim 60 wherein said nucleating agent comprises a particle having a diameter of from 0.1 to 3 μm .

64. The method of claim 60 wherein said nucleating agent comprises talc.

65. The method of claim 60 wherein said nucleating agent comprises an inorganic particle.

66. A method of making a base for an imaging member, wherein said base comprises a closed cell foam core sheet, wherein said closed cell foam core sheet comprises at least one closed cell foam layer, wherein said at least one closed cell foam layer comprises a polymer that has been expanded through the use of a blowing agent, and wherein said closed cell foam core sheet has a density wherein said density comprises a gradient, comprising the steps of adding a blowing agent to a polymer to form a mixture, melting said mixture, extruding said mixture from a die, and rapidly quenching said mixture against a high heat transfer surface, which can be temperature controlled.

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67. The method of claim 66 wherein said blowing agent comprises a chemical blowing agent.

68. The method of claim 67 wherein said chemical blowing agent comprises at least one member selected from the groups consisting of sodium bicarbonate, citric acid or mixtures thereof.

69. The method of claim 66 wherein said blowing agent comprises an exothermic blowing agent.

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70. The method of claim 69 wherein said exothermic blowing agent comprises azodicarbonamide and its derivatives.

71. The method of claim 66 wherein said blowing agent comprises a physical blowing agent.

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72. The method of claim 71 wherein said physical blowing agent comprises at least one gas selected from the group consisting of carbon dioxide, nitrogen, or hydrocarbon.

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73. The method of claim 66 further comprising the step of adding a nucleating agent to said mixture.

74. The method of claim 73 wherein said nucleating agent
5 comprises less than 2% by weight of said polymer.

75. The method of claim 73 wherein said nucleating agent to said nucleating agent comprises a particle having a diameter less than 10 μm .

10 76. The method of claim 73 wherein said nucleating agent comprises a particle having a diameter of from 0.1 to 3 μm .

77. The method of claim 73 wherein said nucleating agent comprises talc.
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78. The method of claim 73 wherein said nucleating agent comprises an inorganic particle.

79. The method of claim 66 wherein said high heat transfer
20 surface, which can be temperature controlled, comprises a surface temperature of less than 45 C.

80. The method of claim 66 wherein said high heat transfer surface, which can be temperature controlled, is characterized by a heat transfer
25 coefficient, which is greater than 113 $\text{W/m}^2 \text{ } ^\circ\text{C}$.

81. The method of claim 66 wherein said high heat transfer surface, which can be temperature controlled, is characterized by a heat transfer coefficient, which is greater than or equal to 850 $\text{W/m}^2 \text{ } ^\circ\text{C}$.
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82. The method of claim 66 wherein said rapidly quenching against high heat transfer surface results in an exposure time to said high heat transfer surface of greater than or equal to 0.1 seconds.

5 83. The method of claim 66 wherein said extruding said mixture from a die, and said rapidly quenching said mixture against a high heat transfer surface are characterized by a t^* therebetween, and wherein said t^* is less than 0.07.

10 84. The method of claim 66 wherein said high heat transfer surface, which can be temperature controlled, comprises metal.

 85. The method of claim 84 wherein said metal high heat transfer surface, which can be temperature controlled, comprises a calendar roll.
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 86. The method of claim 66 wherein said high heat transfer surface, which can be temperature controlled, comprises water.

 87. The method of claim 66 wherein said polymer comprises at
20 least one resin melt strength less than 20 cN at 200 °C.

 88. The method of claim 66 wherein said rapid quenching results in a cast sheet.

25 89. The method of Claims 89 wherein said cast sheet has a cast quenched roughness of from 0.1 to 2.0 μm

 90. The method of Claim 89 wherein said cast sheet is further stretched in at least one direction.
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91. The method of Claim 89 wherein said cast sheet further comprises at least one polymeric flange.